White-tailed Deer

IN BRITISH COLUMBIA

Ecology, Conservation and Management

BRITISH COLUMBIA
Ministry of Environment, Lands and Parks

The graceful and adaptable White-tailed Deer is a strictly American species, with no close relatives on other continents.

INTRODUCTION

The graceful and adaptable White-tailed Deer is a strictly American species, with no close relatives on other continents. Today's Black-tailed (Mule) Deer and White-tailed Deer *(Odocoileus virginianus)* have evolved from primitive deer of the genus *Odocoileus*. The White-tailed Deer is the oldest species of this family. It first appeared in the southern part of North America some four million years ago.

The whitetail is the most widely distributed and abundant ungulate (hoofed mammal) in the western hemisphere. Its range extends across southern Canada from British Columbia to Nova Scotia, and southward through the entire US, Mexico, and Central America into the northern third of South America. All 38 subspecies have adapted to a wide range of environments, from the frigid winters of the Peace River area to the tropical climates of Central and South America.

Whitetails have also demonstrated a remarkable ability to live near people. In the US they are more abundant now than they were when the first European settlers arrived, and in several areas, they are over-populated.

TAXONOMY

Order
Artiodactyla (Even-toed ungulates)

Family
Cervidae (Moose, Elk, Caribou, Deer)

Genus
Odocoileus

Species
virginianus

Subspecies
dacotensis (Dakota Whitetail)
ochrourus (Northwest Whitetail)

Tom Hall

EVOLUTION AND APPEARANCE

The many different subspecies or races of White-tailed Deer and the variations in their appearance, from the diminutive Key Deer of Florida to the large northern forms, suggests a long evolutionary history in the Americas. The northwest whitetail *(Odocoileus virginianus ochrourus)* occurs in the western mountains southward to northern California and Utah. This is the race found in the southern interior of British Columbia. Whitetails in the Peace River region of the province may belong to the prairie subspecies, Dakota Whitetail *(O.v. dacotensis)*. These two subspecies look very similar. After the retreat of the most recent Pleistocene glaciers, White-tailed Deer spread northward into British Columbia from the northwestern states and northwest from the Great Plains into the Peace River region. No one is sure whether this happened soon after glacial melting, 15,000 to 10,000 years ago, or more recently.

The most striking feature of this deer, and the source of its name, is its triangular foot-long tail.

White-tailed Deer stand about 90 cm tall at the shoulder. Adult males (bucks) typically weigh 68 to 102 kg and adult females (does) 45 to 73 kg. But weights vary considerably depending on age, the season, and the condition of the range. Their coat is mostly reddish-brown in summer but changes to grey or greyish-brown in winter, with a contrasting white pelage on the belly, inside of the legs,

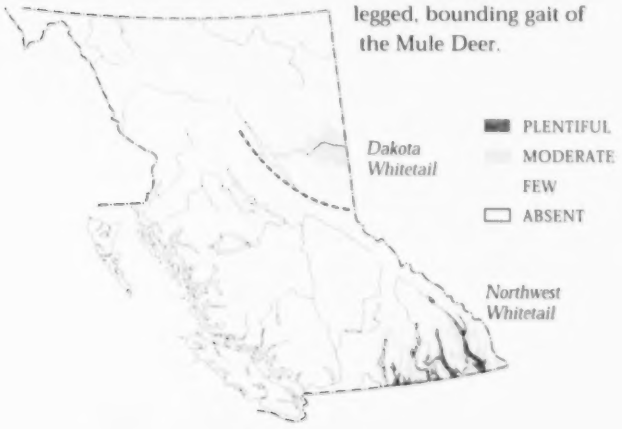
105-03373/

The smooth-flowing gallop of the White-tailed Deer contrasts sharply with the stiff-legged, bounding gait of the Mule Deer.

underside of the tail, around the eyes, and on the chin and throat. The most striking feature of this deer, and the source of its name, is its triangular foot-long tail. On top, the tail is brown with a prominent white fringe, but the underside is snowy white. When a whitetail runs, its tail sticks up and bobs from side to side with each bound.

Whitetail bucks have distinctive antlers that fall off and grow back every year. Each antler has a main beam that rises from the top of the head, curves slightly backward, then turns out and forward over the face. Each main beam holds one to several unbranched tines, or points. Male fawns have no visible antlers, but yearlings may have either a single spike or antlers with four to eight tines. Older bucks always have several tines, but the number of points is not a measure of age. Antlers are full grown when bucks are about five years old, but in older bucks they often have many small tines and look uneven or malformed.

There are obvious differences between White-tailed Deer and their closest relative, the Mule Deer. Mule Deer have a white rump patch surrounding a narrow black-tipped tail. They have large ears and, in adult bucks, branching or dichotomous antlers that divide and redivide into paired beams and points. The two species also have different ways of running, especially when they are alarmed. The smooth-flowing gallop of the White-tailed Deer contrasts sharply with the stiff-legged, bounding gait of the Mule Deer.



DISTRIBUTION AND ABUNDANCE

At the end of the nineteenth century, market hunting and destruction of their habitat had reduced whitetail populations in the US to about 500,000 animals, but conservation programs have brought their numbers up to an estimated 12 million. The whitetail population in British Columbia is very small by comparison. In good years, it may number as many as 65,000. In BC, whitetails are at the far northern edge of their vast North and South American range and many of them die during severe winters here. However, they come back in increasing numbers if we have several mild winters in a row. This pattern is most pronounced in the Peace River region.

This species has shown a remarkable adaptability to land settlement and agricultural activity.

The White-tailed Deer does not occur everywhere in British Columbia. Whitetails are most abundant along valley bottoms in the Kootenay and Okanagan regions, particularly in the southernmost parts of those valleys near the US border. In Northern British Columbia, whitetails are most numerous along the Peace River and the lower reaches of tributaries like the Halfway, Beatton, Moberly, Pine, and Kiskatinaw rivers.

Climate, particularly the depth of the snow, is the main factor in determining the distribution of White-tailed Deer in the province. Within areas that have a suitable climate, whitetails prefer valley bottoms with farmland. Whether or not the development of agricultural land has actually caused an increase in the distribution range of whitetails or their numbers, whitetails have shown a remarkable ability to adapt to land settlement and agricultural activity.

LIFE HISTORY

For White-tailed Deer, the basic social unit is the doe and her fawns. In summer, bucks usually graze alone, or with a few other bucks at most. In winter, particularly when the snow is deep, larger numbers of deer may gather in a favourite feeding area, but they do not have strong social bonds.

In early autumn, just before the breeding season, the magnificent whitetail is in peak physical condition. Their rounded bodies are carrying large reserves of fat, and their thick winter coat makes them look bigger and stronger. Shorter days and cooler temperatures in the fall trigger the start of the breeding season, which peaks in November. Most breeding activity involves yearlings and older animals, but in good habitats a few female fawns may be bred later in the

The basic social unit in White-tailed Deer is the doe and her fawns.

season. Yearling bucks usually don't get a chance to mate, except where older males are in short supply. During the breeding period, also called the rut, bucks with swollen necks travel incessantly, searching for does, pawing up muddy pits along trails, threshing shrubs with their antlers, and fighting with their rivals. Sometimes two similar-sized bucks engage their antlers and vigorously push each other back and forth in serious battle. The winner of these battles usually breeds any receptive does in the vicinity, passing on his superior characteristics to the next generation.

Most does come into heat in November. They are usually bred during this first estrus period, but if not, they have a second or even third estrus at about 28-day intervals. When a doe is in heat, a buck may follow her for two or three days. Bucks fast while they are rutting, so they lose a lot of weight during this period, making them more vulnerable to winter mortality than females.

The doe carries the developing fawns for 195 to 210 days. After this gestation period, the doe drives off her young of the previous year and finds dense cover where she will give birth to her new fawns. In British Columbia, most fawns are born in late May or June. Twins are the rule, but single births and triplets are not uncommon. At birth whitetail fawns have silky, reddish coats dappled with white spots and weigh about 3 kg. Within a few hours after they are born, the fawns can stand and take a couple of wobbly steps on their long spindly legs. Their mothers return a few times each day to nurse and groom them. For the first week or so the defenseless fawns have no odor, and predators can't easily find them. For the first two to three months, they stay close to their mothers and don't go out in the open. As they grow older, they gather strength and confidence and start venturing out with their mothers for longer distances and periods of time. Fawns molt out of their spotted coats in September, are weaned by about October, and weigh about 35 kg by December.

WHEN A WHITETAIL RUNS, ITS TAIL IS RAISED AND BOBS FROM SIDE TO SIDE WITH EACH BOUND. *David F. Fraser*

Whitetails have several external glands that produce distinctive scents. The glands are located inside the split on all four hooves, on the outside of the lower hind leg, and inside the rear legs at the hock. Whitetails use the scents from these glands to communicate with other animals.

Some whitetails live more than 20 years, but few survive more than ten. In hunted herds, most bucks are less than four years old when they are harvested. Winter starvation and predation are the main causes of natural mortality, and as with other ungulates, fawns are the most vulnerable. In some areas, many deer die in highway traffic.

In British Columbia, most births are in late May or June, and twins are the rule, but single births and triplets are not uncommon.

ECOLOGICAL RELATIONSHIPS

For most of the year, valley bottoms are the main habitat for White-tailed Deer in British Columbia. In the East Kootenay area, deer find winter range on south- to southwest-facing slopes and on fans and terraces where shrub stands have developed after wildfires, logging, or land-clearing for agriculture. They also use aspen, cottonwood, and willow groves along rivers and around wetlands in early winter before the snow gets too deep. In areas that get deep snow cover, whitetails depend on patches of coniferous trees that catch the snow and provide places to hide and shelter from winter winds. Grasslands are important at spring thaw, when females need more energy to nourish their near-term fetuses. In summer, the whitetails migrate to floodplains and adjacent terraces where they find the succulent forage crucial for milk production by nursing does. Cultivated fields are also prime foraging sites during summer. The best summer ranges occur in well-developed riparian habitats -- for example, along large rivers such as the Columbia, Kootenay, Elk, Bull, Flathead, and Kettle. Seasonal movements are mostly upstream or downstream along the major valleys, or cross-valley from north-facing slopes in summer to south-facing sites in winter. These deer are strong swimmers and regularly cross large rivers like the Columbia and Peace. White-tailed Deer rarely use the subalpine and alpine zones.

In the Kootenay region in winter, whitetails eat mostly the twigs of woody plants, coniferous foliage, and cured herbs. In spring, they eat mostly grasses and green herbs, and in summer primarily the leaves of deciduous shrubs and trees. Whitetails also relish irrigated crops such as alfalfa, particularly in summer. The most important shrubs in areas like the Pend-d'Oreille Valley include redstem ceanothus, choke cherry, serviceberry, Oregon grape, snowbrush, and seedling cottonwoods. Douglas-fir branches that are broken down by snow and the lichens growing on them are also important winter foods.

In British Columbia, Elk, Mule Deer, domestic cattle, and whitetails may share the same ranges. In summer, they are not as likely to compete for food because forage is abundant. In winter, most Mule Deer remain on steep and rocky mountain slopes, but the whitetails prefer more gentle terrain in the valley bottoms which tends to reduce competition between them for food. Although Elk share some of the whitetails winter ranges, they tend to graze on grasses, sedges, and herbs instead of the woody browse that deer prefer. However, Elk eat shrubs, too, and may compete with whitetails if their own range is over-populated or if herbaceous forage is scarce. Cattle also eat shrubs when other forage is not available, but in general, White-tailed Deer in British Columbia do not have to face serious competition from other herbivores for food.

The whitetail's predators in BC include Grey Wolves, bears, Cougars, Bobcats, and Coyotes. While predation is not a serious threat to the long-term conservation of British Columbia's White-tailed Deer populations, predation can have a substantial impact in combination with severe winters. Whitetails are host to a wide variety of parasites and other disease organisms, but these are seldom a direct cause of death in whitetails in British Columbia. In eastern Canada and the U.S., some White-tailed Deer carry parasites or diseases that are deadly to other native ungulates or livestock. For this reason, the British Columbia government has banned the importation of live members of the deer family into the province.

Predators in whitetail habitats in the province include wolves, bears, Cougars, Bobcats and Coyotes.

FOR MOST OF THE YEAR, VALLEY BOTTOMS ARE THE MAIN HABITATS FOR WHITE-TAILED DEER IN BRITISH COLUMBIA
Michael Stanlake

VALUES AND USES

For centuries the White-tailed Deer has helped humans survive in North America. Native people relied on it for food and clothing. They used whitetail antlers as tools and ornaments; sinews became bow strings, fishing lines, and thread; brains were used for tanning and bleaching. For settlers from Europe, the whitetail was a ready source of income, food, and clothing. Across North America today, the whitetail is primarily a recreational resource. Hunters on this continent probably take more whitetails than any other game animal. In British Columbia, however, fewer White-tailed Deer are hunted because they are less abundant and not so widely distributed as in other places. Even so, BC has some harvestable populations, and many hunters enjoy the challenge of tracking this wily and elusive species in its natural haunts.

Deer viewing and other forms of appreciation are more important today than they used to be. The whitetail is an especially beautiful animal which many regard as a symbol of the outdoors. The southern part of the Kootenay region is the best place in British Columbia to see whitetails. In summer, they are more active at dawn and dusk, but in winter they are active most of the day. Some good places to view whitetails

include the Pend-d'Oreille River valley, the Creston Valley Wildlife Management Area, the Elk River valley near Elko, and the Columbia marshes near Invermere and Radium. However, whitetails are elusive, so finding and identifying them takes a pair of binoculars and some patience.

CONSERVATION

White-tailed Deer are not at-risk in British Columbia, but human activities have made life more difficult for them. The Arrow Lakes, Seven Mile, Duncan, and Libby hydroelectric projects flooded important Whitetail habitat. The Libby Dam (Lake Koocanusa) project alone destroyed habitat for approximately 6000 White-tailed Deer. Farms, highways, railways, towns, and other settlements also occupy valley bottom habitats. Although agricultural development may have favoured Whitetails in some areas, the trend to more intensive agricultural development along southern interior valley bottoms is destroying vital cover and forage. Added to the ongoing development of housing, roads, and commercial ventures, agricultural development is reducing the long-term capability of provincial ranges to support them.

British Columbia's southern valleys are prime sites for human settlement. Reserving these lands for the benefit of White-tailed Deer is unlikely. However, BC has several wildlife management areas or similar reserves scattered across the Kootenay region which contain whitetail habitat. These include the boundary country near Grand Forks, Pend-d'Oreille near Trail, Syringa near Castlegar, Newgate and Strauss along Lake Koocanusa, Wigwam Flats near Elko, Bull River, Premier Ridge and Cherry Creek along the Kootenay River valley, and Columbia Lake near Canal Flats. Several areas set aside primarily for waterfowl also contain whitetail habitat: for example, Creston Valley Wildlife Management Area, the Columbia marshes, and various smaller wetland units.

With support from the provincial Habitat Conservation Trust Fund and BC Hydro's Columbia Basin Fish and Wildlife Compensation Program, several areas are undertaking habitat enhancement measures, such as prescribed burning and logging, which will benefit whitetails. Government initiatives such as Coordinated Range Management plans and Forest Practices Code guidelines should also improve habitat conditions in a number of areas.

For the most part, whitetails have responded favourably to conservation programs, and their short-term future looks promising. However, continued land development in southern interior valleys could seriously jeopardize the long-term abundance

FOR THE MOST PART, WHITETAILS HAVE RESPONDED FAVOURABLY TO CONSERVATION PROGRAMS, AND THEIR SHORT-TERM FUTURE LOOKS PROMISING.
Tom Hall

of the species. British Columbia needs to acquire and enhance more whitetail habitats as well as protecting existing whitetail ranges. Fencing highways and providing safe-passage structures will help protect deer from highway traffic and ensure their access to seasonal habitats.

The graceful whitetail is a valuable and decorative feature of our southern interior ecosystems. Only a concerted effort to live in harmony with these deer will ensure their survival well into the future.

BROCHURE FUNDING PROVIDED BY

HABITAT CONSERVATION TRUST FUND

This project was funded by the Habitat Conservation Trust Fund that was created by an act of the legislature to preserve, restore, enhance and acquire key areas of habitat for fish and wildlife throughout British Columbia. Hunters, anglers, trappers and guides contribute to the Trust Fund enhancement projects through license surcharges. Tax deductible donations to assist in the work of the Trust Fund are welcomed.

PROJECT COORDINATION: IAN HATTER, GAIL HARCOMBE, LIZ STANLAKE, ARLENE BETHUNE
ORIGINAL TEXT: DONALD A. BLOOD
ARTWORK: MICHAEL HAMES
DESIGN: ARIFIN GRAHAM, ALARIS DESIGN
DISTRIBUTION MAPS: ADAPTED FROM RBCM HANDBOOK BY ALARIS DESIGN
©PROVINCE OF BRITISH COLUMBIA 2000
MELP 851540.0300